

**Remarks/Arguments:**

***Summary of Changes Made***

By this Amendment, claims 9-15, 20 and 22-23 have been canceled and claim 16 has been amended. Claims 1-8, 16-19 and 21 are presently pending in the application.

***Election/Restrictions***

Mindful of the requirements of 37 C.F.R. §1.48(b), applicants hereby confirm their prior provisional election to prosecute the invention of group I, claims 1-8, 16-19 and 21. Non-elected claims 9-15, 20 and 22-23 have been canceled.

***Claim Rejections - 35 USC §102***

In the prior Office Action, the Examiner rejected claims 1, 5 and 21 under 35 U.S.C. §102(b) as being anticipated by Foster, Jr. et al., U.S. Pat. No. 3,318,683. As noted by the Examiner, Foster, Jr. et al. discloses a process for preparing alloys of refractory metals, including rhenium alloyed with tungsten, iridium and osmium, respectively. The alloys disclosed by Foster, Jr. et al. are all formed by melting the constituents in an electric arc furnace in a nitrogen atmosphere (see col. 3, lines 14-20), then rapidly cooling the molten metal to form a solid alloy in which excessive nitrogen gas is trapped. The embrittled, solid metal is then crushed and/or ground into a powder using a ball mill, and vacuum heat treated to remove residual nitrogen gas entrained in the metal particles.

Claim 1 of the present application specifies that the alloy exhibits a room temperature tensile strength in excess of 150 Ksi and an elongation of 25% or greater as measured in accordance with ASTM E8-03. The Examiner contends that applicants

have the burden to prove that the alloys according to Foster, Jr. et al. do not possess these properties. To meet this burden, applicants have attached the Declaration of Todd A. Leonhardt Under 37 C.F.R. §1.132. Mr. Leonhardt, who is an expert having knowledge of rhenium and its alloys, explains in his Declaration that alloys according to Foster, Jr. et al. do not possess the same material properties as alloys claimed in the present application. The process disclosed in the present application produces alloys having material properties (e.g., room temperature tensile strength and elongation percentage) that are different than, and substantially superior to, the material properties of alloys formed according to the process of Foster, Jr. et al. The intent of Foster, Jr. et al. is to produce an embrittled metal, which can be fractured into fine particles using mechanical means such as ball milling. Making the metal more brittle obviously makes it less ductile, and thus it does not possess the properties of the alloy as claimed. In light of the Declaration of Todd A. Leonhardt Under 37 C.F.R. §1.132, reconsideration of the rejection of claims 1, 5 and 21 in view of Foster, Jr. et al. is respectfully requested.

Also in the prior Office Action, the Examiner rejected claims 16 and 17 under 35 U.S.C. §102(b) as being anticipated by Kubon et al., U.S. Pat. No. 6,060,829. Kubon et al. discloses a tungsten electrode rod for a metal halide lamp comprising a first portion formed of tungsten and a second portion comprising a tungsten core having a rhenium skin formed thereon. The rhenium skin, which can be formed by wrapping a wire or foil on the tungsten electrode, or by depositing rhenium/tungsten on the electrode by sputtering or vapor deposition, can contain tungsten, but not more than 10% by weight (see col. 3, lines 22-37). Kubon et al. does not provide any information about the

rhenum wire that can be wrapped around the tungsten electrode, how it is made or what properties it possesses.

By this Amendment, applicants have amended claim 16 to specify that the wire is formed of a rhenum alloy that exhibits a room temperature tensile strength in excess of 150 Ksi and an elongation of 25% or greater as measured in accordance with ASTM E8-03. As noted in the attached Declaration of Todd A. Leonhardt Under 37 C.F.R. §1.132, there was no commercially available rhenum wire or rhenum alloy wire available at the time Kubon et al. was filed that exhibited a room temperature tensile strength in excess of 150 Ksi and an elongation of 25% or greater as measured in accordance with ASTM E8-03. Applicants' process is the only such process known that produces alloys exhibiting these material properties. Reconsideration of the rejection of claims 16 and 17, therefore, is respectfully requested.

### ***Claim Rejections - 35 USC §103***

Also in the prior Office Action, the Examiner rejected claims 2-4 and 6-8 under 35 U.S.C. §103(a) as being unpatentable over Foster, Jr. et al. Claims 18-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kubon et al. Applicants respectfully submit that Foster, Jr. et al. and Kubon et al. do not fairly teach an alloy that possesses the mechanical properties claimed, as explained in the Declaration of Todd A. Leonhardt Under 37 C.F.R. §1.132 submitted herewith.

The Examiner also rejected claims 1-8, 16-19 and 21 under 35 U.S.C. §103(a) as being unpatentable over Bewlay et al., U.S. Pat. No. 6,162,552. Bewlay et al. discloses a method of manufacturing a tungsten-based furnace component having a rhenum-

based layer formed thereon. The rhenium-based layer is formed by sintering closely wrapped rhenium-based wire onto a tungsten core. Bewlay et al. teaches that the rhenium-based wire can be an alloy containing up to 11 percent tungsten, but does not teach how such alloy is formed.

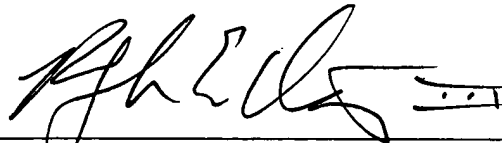
Applicants respectfully submit that, as noted in the Declaration of Todd A. Leonhardt Under 37 C.F.R. §1.132, there was no commercially available rhenium wire or rhenium alloy wire available at the time Bewlay et al. was filed that exhibited a room temperature tensile strength in excess of 150 Ksi and an elongation of 25% or greater as measured in accordance with ASTM E8-03. Accordingly, reconsideration of the rejection is respectfully requested.

### ***Conclusion***

Applicants respectfully submit that the application is presently in condition for allowance and a notice to that effect is earnestly solicited.

Respectfully submitted,

RANKIN, HILL, PORTER & CLARK, L.L.P.

A handwritten signature in black ink, appearing to read 'R. Digges, III', written over a horizontal line.

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